

What is the added value of pilotage?



Ed Verbeek
FNI

Recently, someone from a maritime accident investigation organisation asked me: ‘What does a pilot bring to the bridge?’ In my experience, he is not alone in asking this question. I will try to describe what I consider to be the potential added value of pilotage, fully realising that not all of this happens in every port. Many remarks should be read with the caveat ‘in an ideal world’.

I want to look at three major aspects of pilotage:

- Pilotage as an organisation
- Pilotage as a service
- Pilotage as a system.

Often, people only consider the impact of pilotage as a service to ships. However, this service is only possible because the other two aspects provide the necessary structure.

Pilotage as an organisation

The individual pilot operates as part of a pilotage organisation. And, as with so many things, the whole is (much) more than the sum of the parts. A pilot organisation brings together the knowledge and experience of all the pilots in the area. With this knowledge and experience it is possible to develop tailored education and training programmes that include an understanding of the possibilities and limitations of every type of vessel that visits the port.

Pilots meet regularly at organised conferences and training, as well as in chance encounters in between trips. This provides a feedback mechanism among pilots and between pilots and leadership in the organisation where experiences concerning strategies, berths and vessels are exchanged. Incidents and accidents can be investigated and discussed during organised, informal meetings, where everyone can speak out in a no-blame environment. If a pilot navigates in a way that is considered to be unsafe he will be spoken to on the subject, even if no incident has happened.

When pilots operate as part of an organisation they have more opportunities to recognise developments that have an impact on training, pilots and pilotage, and to integrate these developments in training and in daily operations. With almost daily interaction with other stakeholders in the port, the organisation can be aware of all that happens in the port and distribute this information to all pilots. Many of these opportunities are not available to most Captains/pilotage exemption certificate (PEC) holders or even shipping companies.

There are benefits for external organisations, too. Pilots know the risks and the opportunities involved in port accessibility like nobody else. When stakeholders and pilots work together, this unique knowledge can be used to optimise the safety and efficiency of port operations. When you want to know something about a port, talk to the pilots.

Pilotage as a service

Educated, trained and supported by the organisation, what does a pilot bring as extra to the bridge? A number of reports from very reputable accident investigation organisations give the impression that Master and pilots have roughly the same basic nautical knowledge. They imply that the main difference between the two is that a pilot has extensive local knowledge.

In Amsterdam, less than 25% of pilot training time is spent on local knowledge. You don’t need a year to learn the tracks, depths and widths of the port. While extensive, in-depth port knowledge is essential (the final examination requires the apprentice to draw a chart from memory, including all lengths, breadths, tracks and even bollard numbers), far more time is spent on other aspects of piloting.

SHIPHANDLING

Shiphandling is a major skill set for a pilot. Apprentice pilots spend most of their time handling all kinds of vessels, including working with tugs, and learning how local conditions will influence ships’ behaviour. That so much effort is spent honing these skills indicates that they are not necessarily at the level deemed appropriate when apprentices enter training, even though all apprentices hold CoC Master All Ships and many have sailed as Captain.

Of course, there are a number of Captains that can handle their own ships better than pilots, particularly those on coasters, ro-ros and passenger vessels. However, most of these Captains will not be aware of the possibilities and limitations of vessel types other than those they are used to. Unlike pilots, very few Captains have been systematically



trained and formally assessed. Neither will they have built up a varied shiphandling experience over many years.

At the other extreme, Captains of Capesize vessels with long voyages and anchorages will have less experience in shiphandling in their entire career than an average Dutch pilot has in two to four months. Handling these large vessels, because of the huge mass and slow response times, you need the ability to anticipate. This ability comes only from much experience in shiphandling.

It also requires pilots to know exactly how vessels of any size will react to any given local conditions – and how those conditions can vary. That is why a pilot cannot just become a pilot in another region: the rich bank of variances, and strategies to deal with them, needs to be built up afresh every time. In this context, one might see the pilot as a risk manager.

A key point here is that pilots have the manoeuvring knowledge and experience, the local knowledge, and the knowledge of the influence of local conditions on manoeuvring, necessary to *anticipate* all critical parts of the voyage, both for own vessel and for all vessels they are going to meet. They have developed *strategies* to give the maximum chance of a safe, rapid and successful passage under all hydrological and meteorological circumstances. These will include aborting or not starting the passage if conditions make this prudent.

FOCUSING ON THE PROBLEM

Many years ago, I was involved in a series of simulator runs with a Rotterdam pilot who was not in favour of BRM principles, which were very new at the time. He acted alone, hardly using the team. During the run into Rotterdam, no matter how much misery we gave him, he managed quite well. As a specialist, he knew exactly where he was at a glance. He knew the currents and depths, he knew the VHF frequencies for VTS, port and tugs etc. The next day, he acted as pilot during a run to Singapore. The scenario had far fewer problems than the day before in Rotterdam, but he made a spectacular grounding. He had to think and search for so much more information. It proved



Some time ago I was asked to act as a pilot for simulation runs to Curaçao. When I said that I could not perform as a pilot in Curaçao on the spur of the moment, the staff running the simulator centre were surprised. In their view, a pilot can manoeuvre just about any ship in just about any port in the world. They see the pilot as an expert shiphandler, period.

By contrast, a representative of a shipowner's association thought that the pilot stands in the corner of the bridge with a cup of coffee and says to the Captain: 'The current is setting you to the North. Left here, right there, did you see that barge? There is your berth.' In his view, a pilot was 'only' an adviser on local conditions. He didn't understand why we 'poach' skilled master mariners from shipping companies and give them a year of training. He definitely didn't understand why pilots want to come on board – he was convinced that it is quite easy to give this kind of advice from shore.

The staff from the simulator centre would answer the question: 'What does a pilot bring to the bridge' quite differently from the shipowners' association.

Even people who work with pilots on a daily basis might not realise the extent of the actual work pilots are doing. We had an apprentice pilot who had been chief officer for a number of years and was on the verge of becoming a Master. He had worked for a company that operates coastal chemical tankers. All through the first week of training, he kept repeating 'Nobody ever told me it was like this. What a great job. I had no idea it would be so challenging and gratifying.' If he had become a captain, he would have had no real understanding of the job of a pilot on ship types other than his own.



that you need the back-up of a team when things get hard. It also demonstrates another key point: when problems occur a pilot can focus completely on the problem, as he already knows all local particulars. This gives the ship's crew the opportunity to focus on the vessel's status.

OPERATING WITH A TEAM

In addition to these specialisms, pilot training emphasises communication, operating within different bridge teams, cultural differences and fatigue management, to mention just a few topics.

There is one important task for pilots that most fulfil without realising it. By the time you become a fully qualified pilot in our region, you will have seen 200 bridge teams in full action. Following this, you will work with some 300 bridge teams a year. In some ports pilots do more than 1,000 jobs a year. With this level of experience, a pilot should be able to spot weak aspects within a bridge team.

In 99.5% of cases, the pilot will have the con during transit. In some cases, they may have the con in mooring/unmooring operations as well. The presence of a pilot on the bridge means there is always an opportunity for a navigator/co-navigator arrangement, whether the pilot or the Captain is manoeuvring. If no pilot is taken, many small vessels, and an increasing number of larger ships, will have a one person bridge team consisting of the Captain only – with no possibility to employ this system.

Even on vessels with a larger bridge team, having a pilot on the bridge can be key to ensuring an effective navigator/co-navigator system is in place.

A clarification: I know that in some countries pilots do not consider themselves as part of the bridge team, as they feel that this compromises their duties under licensing and regulatory authorities (see www.americanpilots.org). I will use the term 'team on the bridge' to make the distinction between the 'bridge team' consisting of Master and mates, and the team on the bridge, which includes the pilot(s).

It is debatable whether the mate on the bridge will have the expertise or the cultural confidence to question the Captain – whereas the pilot certainly does.

Most of the Captains involved in shiphandling know how the vessel is supposed to react on certain rudder/engine settings. They are inclined to look at what is happening ‘inside’ the vessel, leading to comments like ‘Port 10 and Slow Ahead has always worked’. A pilot does not know how the vessel is supposed to react to these settings, so he looks ‘outside’ the vessel to see if the results – that is, the behaviour of the vessel – match the demands of the situation. Captain and pilot can complement each other in this respect, and it is irrelevant whether the pilot or the Master has the con.

Pilots have operated in so many different bridge teams that they can identify the strong and weak points in the bridge team and fit in as needed to mitigate the weak points.

Pilotage as a system

Busy ports and canals can only achieve such high traffic volumes because the pilots co-ordinate their manoeuvres with each other, taking into account the possibilities and limitations of the vessels they are piloting. When a sufficiently large percentage of ships carry pilots, the behaviour of these ships becomes predictable. If only a small proportion of the vessels have a pilot on board, the whole system is undermined.

Safety in confined waters is never just about your own vessel. Where do you meet, wait, swing – and while you are doing that, how much time does it cost for another vessel to perform a manoeuvre? Pilots not only know that; the chances are that they have performed that very manoeuvre on exactly that type of vessel.

Captains of specific types of vessel are generally unfamiliar with the possibilities and limitations of other vessels. Sailing on a small vessel, it is quite easy to hinder a large vessel without realising it. When a marginal vessel takes the starboard bend at Velsen (radius about 1.5nm) at a speed of 5–6 knots, it has to keep to the middle of the fairway, or even slightly to the outside of the turn. It would be very difficult to take the turn keeping to the starboard side, as the bank effect will make the vessel want to turn to port. A coaster that cuts the corner even slightly will cause big problems for the marginal vessel.

In the Netherlands tankers with dangerous cargo always have to take a pilot. Most of our channel sides are soft mud so the consequences of a grounding are not severe. The risk is not so much in grounding, but in collisions. One could argue that to counter this risk it is just as important to have a pilot on board the vessel meeting the tanker as it is to have a pilot on the tanker itself.

Pilots should not only be fully part of the team on the bridge, they should also be fully part of a port infrastructure team consisting of VTS, port authorities, tugs, boatmen etc. When communication between ships or between VTS and ships is needed, pilots will be able to give and understand concise messages – they know which points are important in their own waters, and need little explanation. This gives more airtime for other vessels (airtime is always in high demand in busy ports) and reduces the chances for misunderstanding.

Any view on the real value of pilotage needs to take a ‘systems’ approach, as a minimum taking into account all three aspects mentioned above. So what does a pilot, supported by an organisation and working in a system, bring to the bridge? It brings in a specialist who has:

- Knowledge of how the port works (laws, regulations, practical possibilities and limitations, customs of the port, communication) for all types of vessel visiting
- Knowledge and experience in handling of all types of vessel that visit a port, including those encountered by own vessel, in the local circumstances and all environmental conditions
- Knowledge of all circumstances from the usual to highly unusual, and strategies to deal with these (risk management)
- An ‘outsider view’ on the functioning of the bridge team, strengthening the team on the bridge.

I see a pilot as a *specialist*, a subject matter expert, and a Captain as general manager. Within legal boundaries, the Captain decides how to employ this specialist, either in a direct operational capacity or in a more advisory role. The better Captains understand what pilots have to offer, the better they will be able to employ those skills – to everyone’s benefit. 🌐

